Inclusion, exclusion and inequality of access to OERs: Mapping the borders of the digital divide

Student Dissertation

MON: Inclusion, exclusion and inequality of access to OERs: Mapping the borders of the digital divide (Helen Johnson)

Cloud created by:

Dr Simon Ball
3 February 2014

Every educational format raises different issues in terms of accessibility and inclusivity. If a course is offered at a bricks and mortar facility, participation is limited to those who can physically attend. If we opt instead to publish written materials, we exclude those who cannot read and further limit our audience by excluding readers of other languages. If we charge for access to a resource we exclude those who cannot afford it. Concessions are usually made in order to reduce the number of people who are excluded. This might include adaptions to buildings to provide easier access to those with disabilities. Books may be published in multiple languages or with a text-to-speech option for those who cannot read. Resources may be offered at a reduced price on a means-tested basis.

The Open Scholarship movement attempts to remove further barriers by making educational materials widely and freely available online. There is still some debate as to what characterises an open educational resource (OER), and there is not yet a clear, accepted definition of what it means for a resource to be 'open' (Veletsianos and Kimmons, 2012; McAndrew 2010). However, Veletsianos and Kimmons (2012) refer to open materials having to be 'widely accessible' and they emphasise the importance of information being digitised and networked, with the aim of democratising the creation of and access to knowledge.

However, this approach has its own issues. If we choose to propagate educational resources online we exclude those who have no access to the internet. In addition, if our resource is content rich and has substantial multimedia content, it may be inaccessible to those who only have low quality internet access. In order for open scholarship to be considered an inclusive educational movement, we must first recognise those who remain excluded from participation, and actively work towards reducing their number. The impact of a lack of access to educational materials caused by a lack of internet access has been well documented, and is even considered to be a human rights issue (The International Telecommunication Union (ITU), 2003). It is therefore necessary to ask the following; how accessible is digitally published material? Who is excluded from accessing such resources? What barriers do they face? And what can educators do to reduce those barriers?

This presentation will consider several aspects of the issue. First, it will look at who is excluded from accessing online materials due to a lack of internet access. This will include both global and local disparities. Next, it will consider how poor or low quality internet connections impacts access to educational materials as this is a major issue in the developing world. Finally, it will offer a practical demonstration as to how the loband website simplifier (loband, 2013) can be used to help educators meet the otherwise impractical Web Design Guidelines (Aptivate,

Tags

digital divide H818 inclusion internet access LoBand web design

+ Add a tag

In Cloudscapes

OU H818 'The Networked Practitioner' online conference

2012).

By making our resources loband friendly we can all help to reduce the barriers to access faced by those with the most basic forms of internet access.

Extra content

+ Add extra content

Embedded Content

Who is online/offline in the USA and globally?

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added by Helen Johnson

Conference Poster

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ITU document comparing global fixed & mobile internet rates and costs. (Costs of mobile vs fixed BB comparison on page 7)

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Contribute

Discussion (5) Links (7) Academic References (5)

Avril sweeney
11:45am 12 February 2014 Permalink

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Hi Helen,

I'm interested in your topic. Accessibility and inclusion and how to make educational resources more accessible and inclusive? In particular I'm curious about loband and how it can help reduce barriers?

thanks,

Avril

Michelle Bourgein
9:03am 15 February 2014 Permalink

hi Helen, Looking forward to your presentation. It is a topic of interest as we have employees all over the world and produce content is media rich. I'm not so sure (infact I know) we have not been very good at taking the difference in internet quality into consideration.

Helen Johnson
9:38pm 15 February 2014 Permalink

I'm so sorry, I totally missed these comments earlier. The Loband project is run by Aptivate

http://www.aptivate.org/

An NGO with an IT focus. The developed the LoBand web simplifier

http://www.loband.org/loband/

It works as s econdary browser, stripping away everything but the bare essentials and making many more websites accessible to people with slow internet connections. It makes it easy for resource providers to make their sites accessible and does away with the need for the time consuming creation and maintenance of redundant mirror sites.

The LoBand software is open source and you are free to modify or adapt it in any way that you need.

There are also more techincal tools available such as Fiddler

http://www.telerik.com/download/fiddler

Which lets you see exactly which part of your site is hogging bandwidth so that you can make it more streamlined and efficient. It also lets you throttle your connection to mimic low speeds, so you can see how your resources load for people on slow connections.

None of these tools will help people access rich multimedia content, a large video for example won't load any faster just because you use LoBand. However, they do let users be selective in what to download, and help them to explore the parts of the site that they can acces.

Dr Simon Ball
9:19pm 18 February 2014 Permalink

Following the live presentations, we asked each speaker to respond to questions posed by audience members. In the short time available, it was not possible to put all of the questions submitted to the speaker for a response. We asked all speakers if they would respond to the unanswered questions here on Cloudworks. Here are all of the questions asked during the session:

- Will developing countries leap current online learning tech and pedagogy and go straight to mobile learning? Or will they focus on radio and SD cards?
- many innovative (make do/use what you have) solutions in developing country contexts. I think mobile devices have a role to play but only part of the tech infrastructure. Issue is less the device but connectivity IMO.
- Isn't there a language problem as well as an infrastructure problem?
- a lot of the images don't appear to add any value apart from cosmetic
- I often append an 'm.' to the domain name if I am on low bandwidth to get the mobile site. e.g. m.bbc.co.uk
- m.lshtm.ac.uk works but not sure how small it is. Def smaller than the original.
- What about video and audio? Do you have an idea for these? Great presentation by the way
- if you click the links on the lshtm site which is the really simple site, will it stay with this simplicity or does it revert back to the 'all singing all dancing' version?
- If you can't use alt. text how does this affect accessibility?
- loband is this for internet or intranet sites
- This would be interesting to run on the MOOCs that claim to be democratising education
- 3G in South Africa can be faster than fixed broadband but expensive.
- How do VLE/Moodle sites perform on these tests?
- Many UK users use mobile derived access as their main internet route.
- Indian project I looked at said that power and access to internet was the issue in remote sites?

Helen Johnson
12:52am 19 February 2014 Permalink

- Will developing countries leap current online learning tech and pedagogy and go straight to mobile learning? Or will they focus on radio and SD cards?
- It depends what is meant by mobile learning. In my experience developing countries are going straight to digital learning, but not necessarily using mobile devices. Burnt CDs/DVDs are also used to distribute content. The only radio based work I've come across is government provided, and not particularly popular. People who have online access are bypassing older methods and going straight to finding their own materials online.

- many innovative (make do/use what you have) solutions in developing country contexts. I think mobile devices have a role to play but only part of the tech

infrastructure. Issue is less the device but connectivity IMO.

- I completely agree. There is an assumption that people using cellular data services are also using mobile devices, but IME that's often not the case. Cellular data mini hotspots or cellular data dongles for PCs and laptops are probably more common than smartphones.

- Isn't there a language problem as well as an infrastructure problem?
- Definitely, the longer presentation has a section on this but I didn't have time to cover it. I will post a link to some data about it. However, the things that make a site work well with loband (ie. good structure, appropriate use of text and graphics, etc) also make sites work better with online translators. They are far from perfect, but they do help people to access sites they wouldn't otherwise be able to read. Assuming of course the user doesn't speak a minority language that isn't represented online or in translator tools.

- a lot of the images don't appear to add any value apart from cosmetic
- That's often the case with many websites. The pictures are there for aesthetics. There's nothing wrong with that, they make a site look better, and some people prefer to look at pictures than read descriptions, but if it can also stand alone without them it will be a lot more accessible in general.

- I often append an 'm.' to the domain name if I am on low bandwidth to get the mobile site. e.g. m.bbc.co.uk
- m.lshtm.ac.uk works but not sure how small it is. Def smaller than the original.
- This is a common workaround, and at the moment it can be quite effective. Unfortunately, we are seeing more and more mobile sites that are bandwidth heavy. Only the layout gets changed so that it looks more appealing on a small screen (e.g. without lots of scrolling). In developed countries mobile data speeds are expected to exceed current fixed broadband speeds within a few years. It's expected that mobile sites will mirror those developments and continue to get larger and larger. As that happens they will become less and less useful for those with slow connections.

- What about video and audio? Do you have an idea for these? Great presentation by the way
- Beyond the obvious of compression, and splitting huge files into smaller segments, there isn't a lot that can be done. Audio is usually less of a problem than video. One thing that does really help is to include a good description and also the file size, so that users know the link is to a video, etc. It's not uncommon for people to have access to download services in countries where there are better connections in certain areas (e.g. major cities). If there is a video or audio file they really want they may be able to arrange to have it downloaded to CD/DVD and sent to them.

- if you click the links on the lshtm site which is the really simple site, will it stay with this simplicity or does it revert back to the 'all singing all dancing' version?
- If you enter lshtm's own low bandwidth version, then as far as I can see it stays in it. The same for using loband, once you access a site through the loband web simplifer it will continue to open simplified pages as you navigate through. The exception is if you click an image link, the image will then open in a new regular browser window, though you can continue to access other links through the simplfied site.

- If you can't use alt. text how does this affect accessibility?
- Alt-text is intended to give a description of a picture for people who cannot see it, for whatever reason. It's absolutely fine to use alt-text like that, and all pictures should always have an alt-text description. On the loband site it will show up on the simplified site as [i-alt text description] so the user can decide whether they want to click through to see the image or not. The problems come when you get sloppy design and people start embedding navigation information or critical text inside alt-text descriptions. It's bad practice and makes it hard for people to find and follow the important information. Critical text should be in text format. Keep alt-text for it's intended use; describing pictures.

- loband is this for internet or intranet sites
- The web version site is primarily intended for internet sites, but it can also be used for intranet. The code is open source so it can be tweaked as needed.

- This would be interesting to run on the MOOCs that claim to be democratising education
- If anyone has access to such a site, I'd be very interested in how they work with it. I don't use MOOCs myself so I wouldn't really know what I'm looking for.

- 3G in South Africa can be faster than fixed broadband but expensive.
- This is often the case in developing countries. Again, I didn't have time to include it in this talk, but I will link to some data that shows the cost of fixed broadband globally. In many countries fixed BB is totally inaccessible financially, and cellular data services are the only realistic option. Also in some countries they have bypassed fixed phone line technology entirely and gone straight to mobile, so sometimes there isn't an option for fixed BB at any cost.

- How do VLE/Moodle sites perform on these tests?
- As I mentioned above, I have no idea, but I'd love to know!

- Many UK users use mobile derived access as their main internet route.
- Mobile data access is exploding in both the developed and developing worlds. However, if anything, the difference in connection quality is even greater for mobile access than fixed line access. The average UK speed in 2012 was 1.6 Mb/s it's predicted to be 7.8 Mb/s by 2017. That combined with the popularity of unlimited data plans for phones means that within a few years bandwidth will barely be an issue for most UK mobile data users.

- Indian project I looked at said that power and access to internet was the issue in remote sites?
- Yes, this is another issue. There is a tendency to talk about the developing world as if it is some homogenous area where everyone faces the same problems, I am guilty of it myself. Of course, that isn't the case at all. There are a huge number of different problems. Those facing issues with power and internet access tend to fall into the 66% that we didn't talk about. The ones that have no internet access at all. But even within a country there can be very diverse problems.

  For example, in Ecuador, a provider in a high Sierra city, with relatively good power and internet connections needs to consider that those on the Northern coast have much poorer connections and those towards the South will have better connections

but will also be potentially contending with rolling power blackouts during peak times. Those in more rural lower Sierra towns probably won't have access to broadband, and may also have poor cellular data service due to interference from the mountains. In the rainforest areas power is the biggest issue, followed by getting any sort of internet connection. Even when those problems are dealt with (usually in oil drilling areas where the oil companies have installed power and internet), The local people may still struggle with the practicalities of keeping devices working in an extremely hot and humid environment, and even if they do, they are likely to primarily speak a minority language, and so find it difficult to access much information anyway. So yes, the problems are very different in different areas.

Slow connection speeds are just one small example, and the loband website is just one small way to help. But if we all do our bit to chip away at the small problems, maybe we'll see big progress one day!

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